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EXAMINER

WHIPKEY, JASON T

ART UNIT PAPER NUMBER

2612

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/911,736	<b>Applicant(s)</b> KAWAKAMI, CHIKUNI	
	<b>Examiner</b> Jason T. Whipkey	<b>Art Unit</b> 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2-6, 10, 11, 15, 19-21 and 28-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-6, 10, 11, 15, 19-21 and 28-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 2-6, 10-11, 15, 19-21, and 28-31 have been considered but are moot in view of the new ground of rejection.

### ***Claim Objections***

2. Claims 20 and 30 are objected to as failing to comply with 37 CFR 1.75(a) for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Claims 20 and 30 recite the limitation "light emitting devices" on lines 9 and 8, respectively. There is insufficient antecedent basis for this limitation in the claims. For examination purposes, the claims will be treated as if they read, "light emitting diodes".

3. The amendment to claim 15 has vitiated the objection presented in the prior Office action. The objection to claim 15 is withdrawn.

### ***Drawings***

4. Corrected drawings were received on August 22, 2005. These drawings are approved. The corresponding objections are withdrawn.

*Specification*

5. The amendment to the specification has vitiated the objection presented in the prior Office action. The objection to the specification is withdrawn.

*Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 28 is rejected under 35 U.S.C. 102(e) as being anticipated by Olczak (U.S. Patent No. 6,275,256).

Regarding **claim 28**, Olczak discloses a device comprising:

a tubeless electronic flash (at the bottom of Figure 7) mountable on or in a portable camera (in light diffusing body 18 attached to camera 10; see column 2, lines 50-56) and comprising at least one light emitting diode (16A-16L, which produce visible light; see column 4, lines 10-14);

a power supply device (flash power supply 32; see column 3, lines 31-36);

and

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a light emission control device (flash control electrical circuit 28) connected to the power supply device and the tubeless electronic flash (see Figure 7) for supplying electric charge to the at least one light emitting diode for causing the tubeless electronic flash to illuminate an object to be photographed in synchronism with a shutter (see column 3, lines 31-36).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Kishimoto (U.S. Patent No. 5,895,128).

**Claim 2** may be treated like claim 1. However, Olczak is silent with regard to including red, green, and blue LEDs.

Kishimoto discloses an electronic flash (see Figure 18), wherein:

the at least one light emitting diode comprises R, G, and B light emitting diodes (LEDs 631-633, respectively; see column 14, lines 4-10).

As stated in column 14, lines 10-11, an advantage of using red, green, and blue LEDs is that illuminance nonuniformity can be corrected. For this reason, it would have been obvious to

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one of ordinary skill in the art at the time the invention was made to have Olczak's device include red, green, and blue LEDs.

Regarding **claim 3**, Kishimoto discloses that the electronic flash further comprises:

a color temperature setting device (color temperature correction levers 64A and 64B; see Figure 15) that manually sets a color temperature of the light emitted from the electronic flash (see column 12, lines 52-55),

wherein the light emission control device controls ratios between light emission amounts of the R, G and B light emitting diodes so that a color temperature of the light emitted from the electronic flash becomes the color temperature set by the color temperature setting device (see column 13, lines 26-32).

As stated in column 14, lines 10-11, an advantage of adjusting mixed red, green, and blue LEDs is that illuminance nonuniformity can be corrected. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device adjust the mixing of red, green, and blue LEDs.

10. Claims 4, 10, 19 (as dependent on claim 3), 19 (as dependent on claim 4), 20, 21, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Kishimoto and further in view of Yoshiyama (U.S. Patent No. 4,485,336).

**Claim 4** may be treated like claim 2. Additionally, Kishimoto teaches that:

the light emission control device (emission controller 12) controls ratios between light emission amounts of the R, G and B light emitting diodes so that a

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color temperature of the light emitted from the electronic flash light source becomes the color temperature determined by the color temperature determining device (see column 13, lines 29-32).

Both Olczak and Kishimoto are silent with regard to including a color temperature determining device. Yoshiyama discloses:

a color temperature determining device (within window 21) that determines a color temperature of subject light (see column 3, lines 55-60), wherein the light emission control device controls ratios between light emission amounts of the R, G and B light emitting diodes so that a color temperature of the light emitted from the electronic flash light source becomes the color temperature determined by the color temperature determining device (see column 13, lines 54-62).

An advantage of including a color temperature determining device is that a white balance correction may be automatically performed that is most appropriate to the subject's lighting. For this reason, it would have been obvious at the time of invention to have Kishimoto's flash include a color temperature determining device.

Regarding **claim 10**, Yoshiyama discloses:

the color temperature determining device (photoelectric elements PR1, PG1, and PB1) has determining devices that convert color components of the subject light into electric signals and determines the color temperature of the subject light according to a ratio between determination signals of the determining devices (see column 10, lines 45-67).

**Claim 19** may be treated like claim 3. However, Olczak is silent with regard to controlling light emission amounts based on measured light emitting times.

Yoshiyama discloses a flash device, wherein:

a light adjusting sensor (photoelectric elements PR3, PG3, and PB3; see figures 5(a) and 5(b)) that determines one of an amount of reflected light from a subject emitted from one of the R, G and B light emitting devices (illumination sources XG, XB, and XR; see column 3, lines 3-6) of which light emitting amount is smallest among the R, G and B light emitting devices and an amount of reflected light from the subject emitted from the R, G and B light emitting devices (see column 13, lines 54-62, and column 16, lines 29-31);

a first light emission controlling device (flash stop 5) that stops light emission of the one of the R, G and B light emitting devices when the one of the amounts determined by the light adjusting sensor reaches a predetermined reference value (VE) according to the ratios between the light emitting amounts from the R, G and B light emitting devices (see column 14, lines 38-46);

a measuring device (timer TI) that measures a light emitting time of the one of the R, G and B light emitting devices (see column 16, lines 18-23, and column 17, lines 48-51);

a calculating device (see Figure 5(b)) that calculates light emitting times of others of the R, G and B light emitting devices according to the light emitting time measured by the measuring device and the ratios between the light emitting



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amounts from the R, G and B light emitting devices (see column 17, lines 3-47);  
and

a second light emission controlling device (comparators AC2 and AC3)  
that stops light emission of the others of the R, G and B light emitting devices  
according to the light emitting times calculated by the calculating device (see  
column 17, lines 3-47).

An advantage of using measured light emission time is that variations in the spectral characteristics of each flash device can be compensated for. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device measure, calculate, and adjust light emission times, as described by Yoshiyama.

**Claim 19** may be treated like claim 4. However, Olczak is silent with regard to controlling light emission amounts based on measured light emitting times.

Yoshiyama discloses a flash device, wherein:

a light adjusting sensor (photoelectric elements PR3, PG3, and PB3; see figures 5(a) and 5(b)) that determines one of an amount of reflected light from a subject emitted from one of the R, G and B light emitting devices (illumination sources XG, XB, and XR; see column 3, lines 3-6) of which light emitting amount is smallest among the R, G and B light emitting devices and an amount of reflected light from the subject emitted from the R, G and B light emitting devices (see column 13, lines 54-62, and column 16, lines 29-31);

a first light emission controlling device (flash stop 5) that stops light emission of the one of the R, G and B light emitting devices when the one of the

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amounts determined by the light adjusting sensor reaches a predetermined reference value (VE) according to the ratios between the light emitting amounts from the R, G and B light emitting devices (see column 14, lines 38-46);

a measuring device (timer TI) that measures a light emitting time of the one of the R, G and B light emitting devices (see column 16, lines 18-23, and column 17, lines 48-51);

a calculating device (see Figure 5(b)) that calculates light emitting times of others of the R, G and B light emitting devices according to the light emitting time measured by the measuring device and the ratios between the light emitting amounts from the R, G and B light emitting devices (see column 17, lines 3-47); and

a second light emission controlling device (comparators AC2 and AC3) that stops light emission of the others of the R, G and B light emitting devices according to the light emitting times calculated by the calculating device (see column 17, lines 3-47).

An advantage of using measured light emission time is that variations in the spectral characteristics of each flash device can be compensated for. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device measure, calculate, and adjust light emission times, as described by Yoshiyama.

**Claims 20 and 30** may be treated like claims 3 and 4, respectively. However, Olczak is silent with regard to controlling the duty ratios of the on and off times for each light.

Yoshiyama discloses a flash device, including:

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a device (see figures 5(a) and 5(b)) that turns on and off the R, G and B light emitting devices (illumination sources XG, XB, and XR; see column 3, lines 3-6) with duty ratios corresponding to the ratios between the light emitting amounts from the R, G and B light emitting devices (see column 13, lines 54-62; column 14, lines 38-46; column 16, lines 18-23; and column 17, lines 3-47);

a light adjusting sensor (photoelectric elements PR3, PG3, and PB3; see figures 5(a) and 5(b)) that determines an amount of reflected light from a subject emitted from the R, G and B light emitting devices (see column 13, lines 54-62, and column 16, lines 29-31); and

a light emission controlling device (flash stop 5 and comparators AC2 and AC3) that stops light emission of the R, G and B light emitting devices when the amount determined by the light adjusting sensor reaches a predetermined reference value (see column 14, lines 38-46, and column 17, lines 3-47).

An advantage of adjusting the duty ratio of each light is that a variety of lighting conditions may be compensated for. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device adjust the duty ratio for each light.

**Claims 21 and 31** may be treated like claims 3 and 4, respectively. However, Olczak is silent with regard to controlling the lights according to the ratios of light emitting amounts of each light.

a device (see figures 5(a) and 5(b)) that turns on and off R, G and B light emitting devices of numbers according to the ratios between the light emitting

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amounts from the R, G and B light emitting devices (see column 13, lines 54-62; column 14, lines 38-46; column 16, lines 18-23; and column 17, lines 3-47);

a light adjusting sensor (photoelectric elements PR3, PG3, and PB3; see figures 5(a) and 5(b)) that determines an amount of reflected light from a subject emitted from the R, G and B light emitting devices (see column 13, lines 54-62, and column 16, lines 29-31); and

a light emission controlling device (flash stop 5 and comparators AC2 and AC3) that stops light emission of the R, G and B light emitting devices when the amount determined by the light adjusting sensor reaches a predetermined reference value (see column 14, lines 38-46, and column 17, lines 3-47).

An advantage of adjusting the ratio of each light is that a variety of lighting conditions may be compensated for. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device adjust the ratio for each light.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Lebens (U.S. Patent No. 5,745,176).

**Claim 5** may be treated like claim 28. However, Olczak is silent with regard to the specific composition of the power supply.

Lebens discloses a camera flash, wherein:

the power supply device comprises a capacitor (C2 in Figure 10) with a large capacity that is charged by a battery (the supplied 12V signal; see column 11, lines 61-64) and the light emission control device supplies the electric energy

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from the capacitor to the light emitting diode (see column 11, line 64, through column 12, line 3).

An advantage of using a large capacitor to supply the electric energy is that the lights may be lit rapidly and brightly. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device power the LEDs with a large capacitor driven by a battery.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Gudenburr (U.S. Patent No. 6,744,469).

**Claim 6** may be treated like claim 28. However, Olczak is silent with regard to including a temperature sensor for use in obtaining a desired light emission amount.

Gudenburr describes various systems used to measure and compensate for the effects of heat on camera illumination systems, including:

a temperature sensor (such as a thermistor; see column 1, lines 63-66) that determines a peripheral temperature of the at least one light emitting diode (see column 1, lines 35-37),

wherein the light emission control device controls the electric energy to obtain a desired light emission amount according to the peripheral temperature determined by the temperature sensor (see column 1, lines 41-52).

An advantage of compensating for temperature effects on a camera illumination system is that a consistent illumination level may be applied (see column 1, lines 42-43). For this reason,

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it would have been obvious at the time of invention to have Olczak's illumination device include a temperature sensor.

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Kishimoto and Yoshiyama and further in view of Lu (U.S. Patent No. 5,504,524).

**Claim 11** may be treated like claim 9. However, Olczak, Kishimoto, and Yoshiyama are silent with regard to determining the color temperature of the subject light using the camera's imaging device.

Lu discloses a color balance apparatus, wherein:

the color temperature determining device (digital color balance controller 10 in Figure 2) determines the color temperature of the subject light according to color image signals of a subject image captured by an imaging device (image detector 3) of the camera (see column 6, lines 35-43).

As stated in column 1, lines 30-36, and line 65 through column 2, line 3, an advantage of using a signal from an imaging device to determine color temperature is that a separate sensor is not necessary, thus reducing manufacturing complexity and cost. For this reason, it would have been obvious at the time of invention to have Yoshiyama's system use the signal from the image sensor to determine the color temperature of the ambient light.

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Kishimoto and further in view of Gudenbarr.

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**Claim 15** may be treated like claim 12. However, Olczak is silent with regard to adjusting a color temperature of the flash light.

Kishimoto discloses a flash, including:

an adjusting device that adjusts a color temperature of the electronic flash light emitted from the electronic flash (see column 13, lines 26-32).

An advantage of adjusting the color temperature of a flash is that picture quality can be improved under a variety of lighting conditions. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device adjust a color temperature of the flash.

Both Olczak and Kishimoto are silent with regard to including a temperature sensor for use in obtaining a desired light emission amount.

Gudenburr describes various systems used to measure and compensate for the effects of heat on camera illumination systems, including:

an adjusting device (host processor 11) that adjusts a color temperature of the electronic flash light emitted from the electronic flash (see column ); and  
a temperature sensor (such as a thermistor; see column 1, lines 63-66) that determines a peripheral temperature of the at least one light emitting diode (see column 1, lines 35-37),

wherein the adjusting device controls the electric energy provided to the electronic flash to obtain a desired light emission amount according to the peripheral temperature determined by the temperature sensor (see column 1, lines 41-52).

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An advantage of compensating for temperature effects on a camera illumination system is that a consistent illumination level may be applied (see column 1, lines 42-43). For this reason, it would have been obvious at the time of invention to have Olczak's illumination device include a temperature sensor.

15. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Olczak in view of Fujii (U.S. Patent No. 4,462,667).

**Claim 29** may be treated like claim 28. However, Olczak is silent with regard to the specifics of the power supply.

Fujii discloses a flash control device, wherein:

the power supply device comprises a booster device (4) which boosts output voltage of a battery (E1) and a capacitor (C) with large capacity that is charged by the voltage boosted by the booster device (see column 3, lines 23-26), and

the light emission control device (trigger circuit 6) supplies the electric energy from the capacitor to the light (see column 3, lines 26-29).

An advantage of including a booster device and a capacitor is that a large amount of charge can be stored to quickly and brightly induce a flash. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Olczak's device include a capacitor and booster device.



***Conclusion***

16. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Whipkey, whose telephone number is (571) 272-7321. The examiner can normally be reached Monday through Friday from 9:00 A.M. to 5:30 P.M. eastern daylight time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu, can be reached at (571) 272-7320. The fax phone number for the organization where this application is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JTW

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November 14, 2005

  
NGOC-YEN VU  
PRIMARY EXAMINER